

PATENTS

Jay Winchester¹

WHAT IS A PATENT?

A patent is a grant of rights from the United States Government to an inventor that allows an inventor to prohibit others from making, using or selling the claimed invention.² A patent is fundamentally a property right; the metes and bounds of the property can be found in the claims of the patent. The law does not give an inventor the affirmative right to make, use or sell their invention, but if anyone makes, uses or sells a patented invention without permission, then they may be liable to the patent owner for patent infringement and monetary damages.

There are three basic types of patents that can be granted by the U.S. Patent and Trademark Office: 1) utility patents, 2) design patents, and 3) plant patents. The most common type of patent is the utility patent. Utility patents cover any new and useful process, machine, article of manufacture or composition of matter or any new, useful improvement thereof. The rest of this article will address utility patents, unless noted otherwise.

To put patents into a general perspective it is useful to note that they are one kind of "intellectual property." Intellectual property is an intangible or proprietary asset such as trade secrets, trade dress, copyright, patents or trademarks. A patent may be obtained for any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement of a process, machine, manufacture or composition of matter.³ In contrast, copyright protection may be obtained for material such as literary, musical or dramatic works, motion pictures and sound recordings, etc.⁴ Although relatively unusual, it is possible to have a patent and copyright protection for the same or substantially related subject matter. For example, it may be possible to acquire patent protection for a human-made algorithm driving a computer software program

¹Legal Counsel, Office of the Staff Judge Advocate, USA Medical Research & Materiel Command, Fort Detrick, MD.

²35 U.S.C. § 271.

³35 U.S.C. § 101.

⁴17 U.S.C. § 102.

and also be able to obtain copyright protection for the computer program itself. A trademark is a word, name, symbol, etc., used in connection with a product or service that helps consumers to identify that product and distinguishes it from competitors' products. The Nike symbol is an example of a trademark. A trade secret is information that has independent economic value because it is not generally known and it is maintained as a secret because of that value. The formula for Coca-Cola is an example of a trade secret.

Although related due to their "intangible" nature, the source and history of the laws governing the various forms of intellectual property are different. Generally, federal law governs patents and copyright exclusively. Trademark law is governed by both federal and state law; the federal trademark law stems from the general authority of the Interstate Commerce clause and not from a specific constitutional provision.⁵ State law governs the law of trade secrets almost exclusively. One notable exception is the somewhat misleadingly named Trade Secrets Act, a federal statute, which makes it a felony for federal employees to disclose confidential information of one party to another party outside of the government.⁶ The Constitution specifically authorizes Congress to ". . . promote the progress of science and useful arts by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries. . ."⁷ Thus, exclusively federal law emanating from the Constitution itself governs patents and copyrights.

WHO IS IMPORTANT IN THE PATENT PROCESS?

In the Medical Command, there are several key individuals involved in the patent process and the technology transfer mission generally. The first key individual is the inventor. If any Army employee, whether civilian or active duty, believes they have invented or discovered something which may be novel or patentable, then they have an obligation to report that invention or discovery to

⁵U.S. Constitution, ART 1, SEC 8, CL 3.

⁶18 U.S.C. § 1905.

⁷U.S. Constitution, ART 1, SEC 8, CL 8.

cognizant patent counsel.⁸ In the Medical Command, this should be done through the local Judge Advocate office to the MEDCOM patent counsel located at the Office of the Staff Judge Advocate, U. S. Army Medical Research and Materiel Command at Fort Detrick. The report should be made on DA Form 4734-R, Invention Disclosure. All inventions should be reported whether done on duty time or not. It is to the advantage of each inventor to report inventions even if they believe they invented something completely on their own time using their own resources. Reporting the invention and requesting an invention rights determination by the Army, if necessary, will result in a final agency determination that, at a minimum, will remove any cloud regarding title (ownership) to the invention. It is also to the advantage of the inventor to report inventions if they did it on duty time because the Federal Technology Transfer Act of 1986 granted a share of royalty income to inventors who assign their rights to the government.⁹ Thus, government inventors may receive a minimum of 15%, in DOD it is 20%, of any royalty income received by their agency for licensing out patented inventions up to an annual amount of \$150,000.00.

The next key individual is the patent counsel. Patent counsel are very rare individuals and as of the date of this article there are still only about 22,000 patent practitioners registered to practice before the United States Patent and Trademark Office (PTO). To be eligible to take the day-long examination, which must be passed to be registered as a patent attorney with the PTO, an individual must be a licensed attorney and have at least a bachelor of science in a recognized scientific discipline such as physics, chemistry or biology or a degree in engineering. The primary job of the patent attorney is "prosecuting" a patent application. That is, the patent attorney takes the invention disclosure from the inventor(s) and drafts a patent application and attempts to convince the PTO through a very labyrinthine process that the application contains claims, which are worthy of issuing as a patent. The job of the patent attorney is very difficult for a variety of reasons. First, inventors often have almost a parental relationship with their invention and that coupled with perhaps a lack of understanding of the patent process may lead to frustration and defensiveness in interacting with the patent attorney. Second, the requirements of the

⁸Army Regulation 27-60.

⁹15 U.S.C. § 3710c.

patent process are very exacting with deadlines, which if not met may lead to loss of patent protection on the invention. Third, the patent attorney seldom comprehends the invention immediately, perhaps in part because their primary professional training is in law or because their scientific training may not be perfectly relevant to the invention at hand, therefore, they are very dependant upon the inventor to educate them on their invention. Finally, government patent offices are seldom adequately resourced.

The next key individuals are attorneys in the local legal office. Inevitably, if someone thinks they have invented something they will wander into or call the local legal office. It is important that local attorneys recognize the need to have the invention reported in as timely a fashion as possible to the cognizant patent attorney, preferably on DA Form 4734-R. It is also important that local attorneys provide as much support as possible, such as getting the appropriate forms to the inventor(s) or providing timely notary service to the inventor(s) and cognizant patent attorney in recognition of the fact that the patent attorney is usually not adequately resourced. Finally, local attorneys can play a crucial role in educating inventors on the patent process and encouraging cooperativeness and patience. The patent process can truly be time-consuming, bewildering and frustrating to an inventor and often the patent attorney does not have the time to explain all that they would ordinarily like to explain to the inventor.

A fourth key group in the patent process is an Invention Evaluation Committee established under AR 27-60. This group includes the management of the activity of the inventor. This committee is chartered to review invention disclosures and provide advice to the patent attorney on whether or not the Army should pursue a patent application on any given invention disclosure. The PTO does not depend upon appropriated money from Congress for its operations; it sustains itself through substantial filing and maintenance fees. Consequently, the prosecution of a patent application can be somewhat expensive because almost every filing with the PTO must be accompanied by the requisite fee. Given the scarcity of resources for patent prosecution it is important that the MEDCOM prioritize inventions and use its scarce resources for those inventions with either potentially high military or commercial value.

WHEN AND HOW ARE PATENTS PROSECUTED?

The earlier an invention is reported to the cognizant patent attorney, the better. The inventive act consists of conception and reduction to practice. It is very important that inventions are reported to the patent attorney and a provisional or non-provisional patent application is filed with the PTO before it is published outside of the agency and ideally as close to its conception as possible. Conception occurs when a definite and permanent idea of the complete and operative invention as it is to be applied is formed in the mind of the inventor. Normally, reduction to practice occurs after conception. Reduction to practice occurs when the invention is embodied in some physical form that actually works. Once an invention has been reduced to practice the potential for loss of patent rights is greatly increased. For example, if a patent application is filed in the United States one day after an invention is reported in a publication, then virtually all patent rights in any other country than the United States are lost. The United States is essentially the only jurisdiction where an inventor has the opportunity to obtain a patent on their invention for one year after that invention has been used, published or offered for sale in the United States. If you do not file a patent application within one year of using, publishing or offering for sale your invention, then you will lose all patent rights, even in the United States.¹⁰

In the Army, an Army employee should report their invention on DA Form 4734-R through their local legal office to their cognizant patent attorney. The patent attorney will review the disclosure and if it contains sufficient information ask the Invention Evaluation Committee (IEC) to assess the invention for commercial or military value. If the IEC or the inventor's organization advises the patent attorney the invention has sufficient commercial or military potential to justify the expenses of prosecution then the patent attorney will file either a provisional or non-provisional application. Once a Notice of Filing has been received from the PTO and a filing date has been established the risk of losing patent rights because of publication, use or

¹⁰35 U.S.C. § 102.

sale is substantially reduced. Be alert as inventors commonly publish before they inform the patent attorney.

After the patent attorney files a non-provisional patent application, a patent examiner at the PTO will examine the application to make sure it meets all of the statutory requirements. A patent application must, inter alia, contain a description of an invention that is new, useful and unobvious. It must also contain a specification that includes a description of the best mode of operation of the invention and one or more claims. The claims are the actual metes and bounds of the patentable property that is owned, when issued as a patent. The patent application must also be accompanied by a fee and an oath from the inventor(s) that they believe themselves to be the original inventors of the invention described. In most cases, inventors can expect to have to respond to at least one "office action" from the PTO. It is very common for an inventor to have to distinguish their invention from an invention which is described in the literature, i.e., they must distinguish the invention over the prior art, and they will work very closely with the patent attorney in formulating the argument to the patent examiner, even occasionally interviewing with the patent examiner. If all goes well the patent examiner will issue a Notice of Allowance, the patent attorney will pay the issuance fee and a patent will issue. It is important to note that property rights do not vest in an invention until a valid patent is issued. Once issued, all of the listed inventors have an undivided ownership interest in the patent. I note that in the Army employees generally have an obligation to assign their ownership interest to the Army, unless a determination of rights favorable to the employee has been made.

One concern that often confuses inventors is the order of listing of co-inventors. Unlike publications, where the ethical norm is that authors are listed in relative order of contribution, there is no such ranking under the patent law. For this reason, many patent attorneys often simply list co-inventors alphabetically to emphasize the point that they are all equal joint inventors.

WHY ARE PATENTS IMPORTANT?

In the modern industrialized world, particularly in the United States, scientific and technical advance is probably the single most important factor pervading our economic, political and social life. Continuance of our very high quality of life depends upon scientific and technical advance. It is very significant to recognize that the United States has invested in research and development towards the advancement of science and technology more than any other society in the history of the world. Indeed, from approximately World War II until 1980, the United States invested more resources annually towards research and development than all other countries in the world combined. One way to capitalize on this investment is to establish a property right system that motivates continuing innovation. The patent system is designed to offer incentives to creative individuals so that they expend their time and energy inventing and thereby advancing our quality of life. Many of the requirements in the patent process that may seem strange can be understood by remembering that the process exists to ensure inventors reap the benefit of patent property ownership only if their inventive activity benefits society.

Patents are also very important in the Technology Transfer Program. The Technology Transfer Program was created in an unusually bipartisan effort by Congress to enable further capitalization of our research and development investment. Recognizing that many new discoveries occur in federal and academic laboratories while the application of these discoveries depends upon industry, Congress sought in the creation of the Technology Transfer Act to promote industry utilization of government patents.

The Federal Technology Transfer Act of 1986, Title 15 U.S.C. 3710, generally affects government owned patents in two significant ways. First, the Act authorizes laboratory commanders/directors to sign patent license agreements, which are the vehicle to give permission to industry to use a government invention.¹¹ Prior to the Act, patent license agreements had to be executed at the secretariat level in the Department of the Army. Thus, the Act reduces dramatically the level of approval and the consequent

¹¹15 U.S.C. § 3710(a)(2).

staffing workload. Second, the Act, through creation of "cooperative research and development agreements" (CRDAs), also signed by laboratory commanders/directors, authorizes the licensing of government owned inventions in advance without competition if they arise under the CRDA. Prior to the Act, not only was there no such authority for federal laboratories to interact with industry, but the authority for patent licensing involved a time-consuming competitive process, including publication in the Federal Register, that created a substantial disincentive for industry to apply federal scientific and technical innovations.

